UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,859	05/02/2001	Brian Kilgore	2479.1013-000	9186

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EXAMINER
LUTHER, WILLIAM A

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/847,859	KILGORE, BRIAN
	Examiner	Art Unit
	William A. Luther	2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 August 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-8 and 19-21* is/are allowed.

6)☒ Claim(s) *1-5,9-18, 22-28,30* is/are rejected.

7)☐ Claim(s) *29 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Applicant's arguments with respect to pending claims have been considered but are

moot in view of the new ground(s) of rejection.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 9-18, 22-28, and 30 are rejected under 35 U.S.C. § 103(a) as being

unpatentable over Admitted Prior Art **(APA)** in view of U.S. Patent No. 6,246,883 to Lee

('883).

Considering claims 1, 11-16, 24, 27-28, and 30 Admitted Prior Art **(APA)** teaches
streaming data signals **(Fig. 2a)** in a wireless network (e.g., "IS 95 or others", **pg. 1 line
17 – pg. 2 line 7)**[1] each of the data signals corresponding to a particular symbol **(Fig.**

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[1] The background section shows that it is *commonplace*, due to computer networks, to carry digital A/V
data rate sufficient to provide a user with a real time audio or video output image. The background
section also shows that such streaming transmissions occur in a series of frames, in which each frame
contains symbols indicative of a particular audio or video signal. The symbols are output, or played back,
to the user in sequence from the frame. Each frame, therefore, represents a predetermined time interval
of playback. Lost or late frames, while not fatal to transmissions are perceived as a "blip" or "pop" for the
duration, or interval, of the frame. Sufficient frames should be received in a particular timeframe in order
to satisfy the aggregate interval they represent, i.e., an average of one frame per time interval
represented by that frame.

The background also shows a wireless network, in which frames are transmitted video radio frequency
medium according to a particular protocol, such as IS_95 or others. Therein, wireless networks are
described to exhibit different performance characteristics than their wired network counterparts. Wireless
networks have higher rates of lost or late packets due to interference and other factors, which affect
propagation of the RF signals. Wireless networks typically employ a plurality of shared RF channels
among multiple users, in which a plurality of wireless connections are shared over the same wireless
channel. The channels are switched, or multiplexed, among the multiple wireless connections according
to a predetermined protocol, such as Code Division Multiple Access (CDMA), Time Division Multiple

2a, noting that the ordinary artisan, in the context of IS_95, would recognize "symbol" to correspond to and/or be suggested by "data"), and arranging the symbols in a series of frames (**Fig. 2a**).[2] **APA** does not teach interleaving symbols in one of the frames with symbols in an adjacent one of the frames in series of frames. However, '**883** shows that it was within the level of skill of the ordinary artisan to arrange data in a series of frames ('**833 Fig. 5**)[3] and interleaving data in one of the frames with data in other frames in a series of frames. '**833** thus appears to suggest interleaving data between different frames including but not limited to adjacent frames (see '**833**, e.g., "Block **502** divides the encoded data stream into frames [and] interleaving data from multiple frames...."). It further appears that the ordinary artisan would have been motivated to apply '**833** teachings, to interleave data symbols across multiple frames for the purpose of protecting "... entire frames from being destroyed by a signal fade." '**833, col. 6, lines 23-26.**

Considering claims 2-3, '**833** appears to suggest transmitting each of the frames to a remote receiver and de-interleaving data symbols at the remote receiver wherein de-interleaving restores the previous series of frame. See, e.g., '**833** at #550-554.

Considering claims 4-5 and 17-18, as discussed, '**883** appears to suggest the invention although not explicitly teaching that interleaving is based on predetermined number of symbols selected according to a predetermined spreading computation. However, such would appear to be obvious due to time saved implicit to a preset plan of action.

Access (TDMA), or Frequency division multiple access (FDMA). In the case of streaming A/V transmissions, such sharing occurs at a rate sufficient to provide transmission of the frames according to the time interval represented by the frame. While transmissions such as e-mail can be transmitted over time, aggregated, and presented to a user after complete reception, streaming real-time audio or video should be received according to the predetermined rate so that the output image perceived by the user is intelligible, and not prone to blips and pops.

[2] Fig. **2a** shows prior art A/V transmission streaming including four frames **30, 32, 34,** and **36** containing symbol sequences **A, B, C,** and **D**, respectively. Four frames are show as exemplary; a typical stream may have many more frames. Each of the symbols in the sequence is played back to the user as a portion of an audio or video image. The number of frames depends on the number of symbols per frame. The number of symbols required dependents on the quality of the out put image desired. In one embodiment, approximately 44,000 symbols are required to produce 1 second of CD quality audio. Telephone quality voice can be produced employing only 8000 symbols per second.

[3] In '**883**, digital data is illustrated at **Fig. 5 #501**. In '**883**, the term "data" would at least suggest symbols to the ordinary artisan (each protocol, identified, is transmitted using symbols that represent one or more bits). The applicant appears to know this due to the mention of technology that uses symbols, i.e., "IS_95 and others." Instant Pg 1. IS_95 is based on CDMA technology. '**833** thus suggests CDMA. Protocols and technologies include but are not limited to Advanced Mobile Phone System (AMPS), General System for Mobile Communications (GSMC), Personal Digital Cellular (PDC) Time Diversity Multiple Access (TDMA) and Code Division Multiple Access (CDMA.) '**833, Col. 5.**

Considering claims 9 and 22, protocols identified by applicant (on page of the instant application's specification) is IS_95, those suggest/require vocoders. '833 also suggests CDMA, the technology that IS_95 is based upon. To the extent that IS_95 does not itself necessarily require vocoders, Official Notice is Independently taken that was then ubiquitous in hardware for carrying out IS_95. Accordingly, it would have been obvious to the ordinary artisan to use a vocoder as, e.g., means to convert sampled voice into symbols that represent that voice for the benefit of compliance with established and future-planned industry standards.

Considering claims 10 and 23, **APA** appears to suggest voice/video (**pg. 1, lines 4-15**). "Telephone quality voice" (**pg. 5, line 3**) in frame transmission environment including computer networks (pg. 1, line 5) would suggest VOIP. '**833 Fig. 5** also appears to teach compression in voice/video environments mentioned at **col. 5** (i.e., CDMA, TDMA, PDC, GSMC, AMPS, GSMC).

Considering claims 25-26, as discussed, '**833** teaches using computer readable storage medium, e.g., abstract. '**833** also appears to teach a PC controller and a baseband processor, e.g., Fig. **2**. To the extent that claimed program code is not explicitly thus show, it would have been obvious for minimizing cost of hardware parts for performing the same suggested functions.

Allowable Subject Matter

Claims 6-8 and 19-21 appear to be allowable due to the prior art of record not teaching or suggesting the entire combination of elements including "dynamic computation," as claimed.

Claims 29 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The instant description is relied upon for interpreting the meaning of the term "symbol position map."
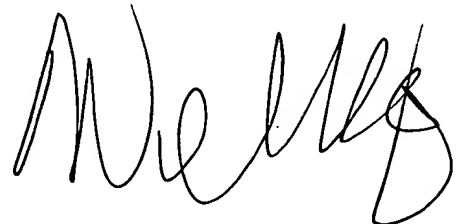
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William A. Luther whose telephone number is (703) 308-6609. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Primary Examiner
William Luther